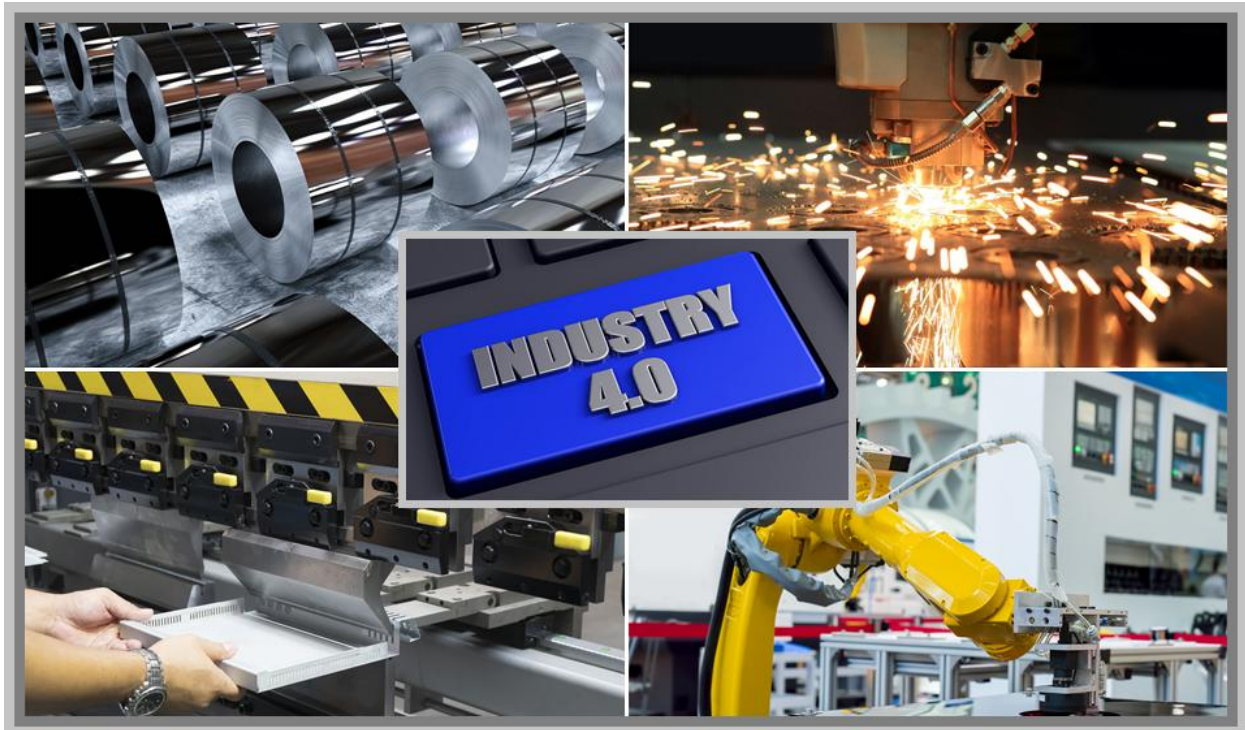




Global Edge® Engineering Assistant



Workflow #: 2 – Manufacturing Engineering **(Process Part Batch & Test)**

Table of Contents

Demo Section 2: Manufacturing Engineering Workflow 3

Workflow #: 2 - Process Part Batch & Test (Manufacturing Engineering Diagram)..... 4

Work Queue Batch #: ?? (GlobalEdgeCAD_SLD) 5

Part Numbers Associated with Bend Process Test Batch (Work Queue Batch #: #) 5

Work Queue Batch #: # (GlobalEdgeCAD_SLD)..... 5

2.1 – Automated Production Work Queue 6

Work Queue Batch #5 (Batch to Process Bend Process Test Parts): 7

2.2 – Automated Sheet Metal Batch Unfolding..... 11

2.3 – Automated CAD Part Analysis 14

2.4 – Automated Routing Generation..... 15

2.5 – Automated Manufacturability Testing..... 16

2.6 – Automated Bend Program Generation..... 18

Demo Section 2: Manufacturing Engineering Workflow

Global Edge Engineering Assistant provides Manufacturing Engineering Workflow capabilities that includes **"Process Part Batch and Test"** to illustrate the automated batch processing of sheet metal parts including Manufacturability Testing of daily orders downloaded from ERP.

- **2.1 – Automated Production Work Queue**
- **2.2 – Automated Sheet Metal Batch Unfolding**
- **2.3 – Automated CAD Part Analysis**
- **2.4 – Automated Routing Generation**
- **2.5 – Automated Manufacturability Testing**
- **2.6 – Automated Bend Program Generation**

Manufacturing Engineering Workflow illustrates **"Automated Shop Floor Data Preparation"** capabilities that provide an automated approach for reducing and eliminating labor-intensive workflow tasks associated with the daily production process.

Step 2.1: Starts with an **"Automated Production Work Queue"** that processes orders downloaded from ERP and automates labor-intensive tasks associated with the engineering workflow process.

Step 2.2: Includes **"Automated Sheet Metal Batch Unfolding"** that generates DXF Flat Files from 3D SolidWorks sheet metal CAD models. This includes the incorporation of Extended Data with the necessary parameters to enable the automated generation of Nestings, CAM Bend Programs and Production Schedules.

Step 2.3: Includes **"Automated CAD Part Analysis"** of complete sheet metal part parameters to serve as a foundation for Manufacturability Testing, Automated Routing, Bend Program and Sales Quote Generation.

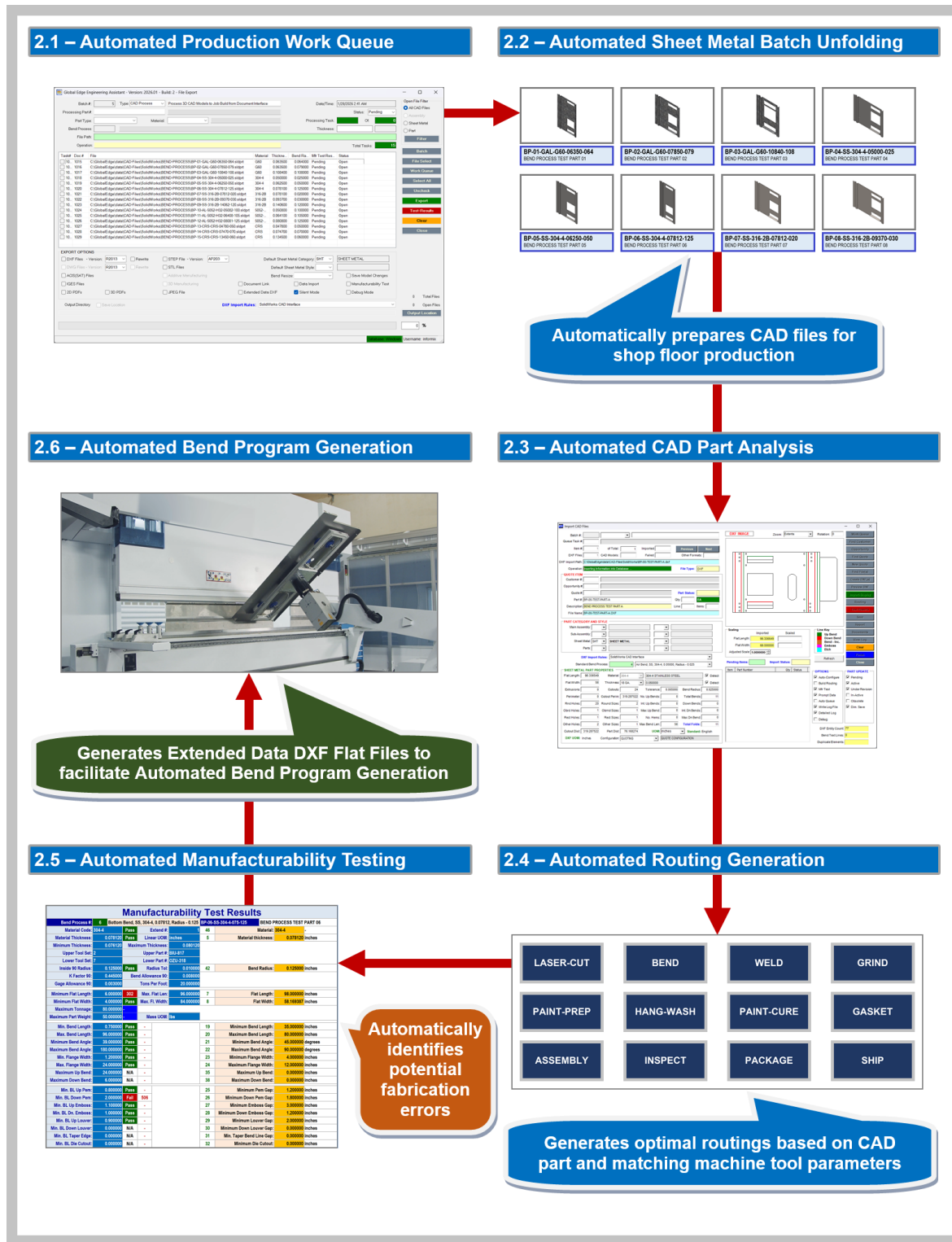
Step 2.4: Includes **"Automated Routing Generation"** that compares CAD part parameters with a matching bend process to identify any potential fabrication errors that may occur before leaving engineering.

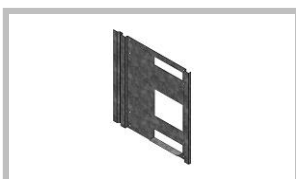
Step 2.5: Performs **"Automated Manufacturability Testing"** that compares CAD part parameters with a matching bend process to identify any potential fabrication errors that may occur before leaving engineering.

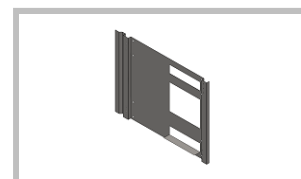
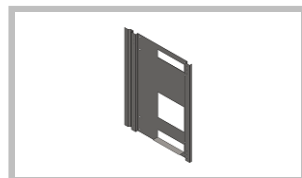
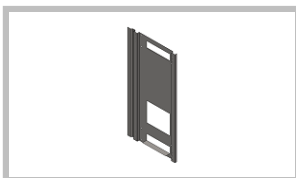
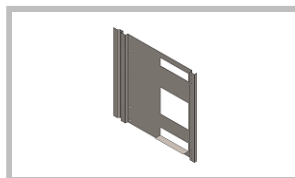
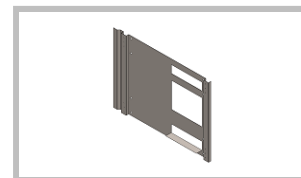
Step 2.6: Enables **"Automated CAM Program Generation"** by embedding extended data into DXF flat files that includes parameters such as material, thickness, bend tools, bend radius, standard bend process, required dates, quantity required, etc., required by nesting software, CAM Bend program software, and scheduling software to process batches automatically.

Workflow #: 2 - Process Part Batch & Test (Manufacturing Engineering Diagram)

This workflow scenario illustrates the automated batch processing of sheet metal parts including Manufacturability Testing of daily orders downloaded from ERP.



Work Queue Batch #: ?? (GlobalEdgeCAD_SLD)
BP-01-GAL-G60-06350-064
 BEND PROCESS TEST PART 01

BP-02-GAL-G60-07850-079
 BEND PROCESS TEST PART 02

BP-03-GAL-G60-10840-108
 BEND PROCESS TEST PART 03

BP-04-SS-304-4-05000-025
 BEND PROCESS TEST PART 04

BP-05-SS-304-4-06250-050
 BEND PROCESS TEST PART 05

BP-06-SS-304-4-07812-125
 BEND PROCESS TEST PART 06

BP-07-SS-316-2B-07812-020
 BEND PROCESS TEST PART 07

BP-08-SS-316-2B-09370-030
 BEND PROCESS TEST PART 08
Part Numbers Associated with Bend Process Test Batch (Work Queue Batch #: #)

PART #	DESCRIPTION	DESCRIPTION 2	TYPE	CAT	MTL.	UOM
BP-01-GAL-G60-06350-064	BEND PROCESS TEST PART 01	16 GA - Thick: 0.06350 - Bend Rad: 0.064	CMP	SHT	G60	EA
BP-02-GAL-G60-07850-079	BEND PROCESS TEST PART 02	14 GA - Thick: 0.07850 - Bend Rad: 0.079	CMP	SHT	G60	EA
BP-03-GAL-G60-10840-108	BEND PROCESS TEST PART 03	12 GA - Thick: 0.10840 - Bend Rad: 0.108	CMP	SHT	G60	EA
BP-04-SS-304-4-05000-025	BEND PROCESS TEST PART 04	18 GA - Thick: 0.05000 - Bend Rad: 0.025	CMP	SHT	304-4	EA
BP-05-SS-304-4-06250-050	BEND PROCESS TEST PART 05	16 GA - Thick: 0.06250 - Bend Rad: 0.050	CMP	SHT	304-4	EA
BP-06-SS-304-4-07812-125	BEND PROCESS TEST PART 06	14 GA - Thick: 0.07812 - Bend Rad: 0.125	CMP	SHT	304-4	EA
BP-07-SS-316-2B-07812-020	BEND PROCESS TEST PART 07	14 GA - Thick: 0.07812 - Bend Rad: 0.020	CMP	SHT	316-2B	EA
BP-08-SS-316-2B-09370-030	BEND PROCESS TEST PART 08	13 GA - Thick: 0.09370 - Bend Rad: 0.030	CMP	SHT	316-2B	EA

Work Queue Batch #: # (GlobalEdgeCAD_SLD)

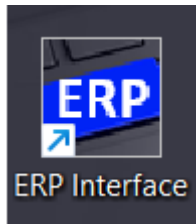
Workflow #: 3	BP-01-GAL-G60-06350-064	16 GA - Thick: 0.06350 - Bend Rad: 0.064	BP-01-GAL-G60-06350-064.sldprt	C	G60
Workflow #: 3	BP-02-GAL-G60-07850-079	14 GA - Thick: 0.07850 - Bend Rad: 0.079	BP-02-GAL-G60-07850-079.sldprt	C	G60
Workflow #: 3	BP-03-GAL-G60-10840-108	12 GA - Thick: 0.10840 - Bend Rad: 0.108	BP-03-GAL-G60-10840-108.sldprt	C	G60
Workflow #: 3	BP-04-SS-304-4-05000-025	18 GA - Thick: 0.05000 - Bend Rad: 0.025	BP-04-SS-304-4-05000-025.sldprt	C	304-4
Workflow #: 3	BP-05-SS-304-4-06250-050	16 GA - Thick: 0.06250 - Bend Rad: 0.050	BP-05-SS-304-4-06250-050.sldprt	C	304-4
Workflow #: 3	BP-06-SS-304-4-07812-125	14 GA - Thick: 0.07812 - Bend Rad: 0.125	BP-06-SS-304-4-07812-125.sldprt	C	304-4
Workflow #: 3	BP-07-SS-316-2B-07812-020	14 GA - Thick: 0.07812 - Bend Rad: 0.020	BP-07-SS-316-2B-07812-020.sldprt	C	316-2B
Workflow #: 3	BP-08-SS-316-2B-09370-030	13 GA - Thick: 0.09370 - Bend Rad: 0.030	BP-08-SS-316-2B-09370-030.sldprt	C	316-2B

2.1 – Automated Production Work Queue

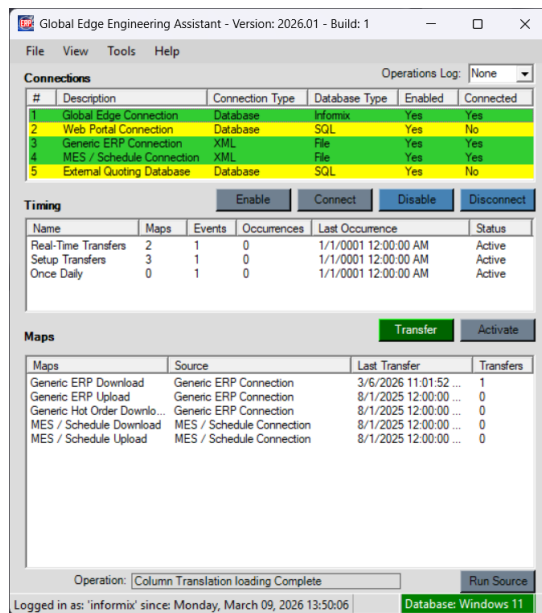
GE-02.1-Avatar-A.mp4

Global Edge Engineering Assistant includes an optional ERP / MES dynamic two-way interface that integrates ERP with Engineering, Manufacturing, and the shop floor. The first step is to launch the **Global Edge ERP / MES Interface** by clicking on the following icon.

1. Launch the **Global Edge ERP / MES Interface** by clicking on the following icon:



2. This will display the **Global Edge ERP / MES Interface**:



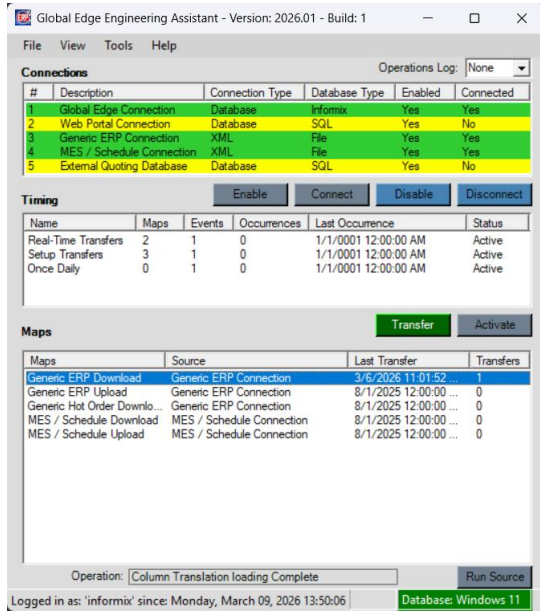
GE-02.1-Avatar-B.mp4

The **Global Edge ERP / MES Interface** provides a flexible method to map information between CAD, MES and ERP which include part, bill of materials and routing information. It also includes Sales Quotes, Sales Orders, Production Orders and scheduling information. This also includes integration with customer website portals to provide accurate, real-time information throughout the manufacturing enterprise. The **Global Edge ERP / MES Interface** can run in the background at designated time intervals or in real-time.

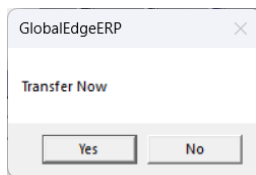
GE-02.1-Avatar-C.mp4

In our illustration, we'll manually download daily order information from ERP to the **Global Edge** database. We'll start by highlighting the ERP download data map to initiate and complete this download of daily information which will automatically populate the various work queues available throughout the **Global Edge** system.

- Highlight the **"Generic ERP Download"** Data Map to manually download daily ERP orders including the associated workflow tasks:



- Select **"Transfer"** button followed by answering **"Yes"** to the following prompt:

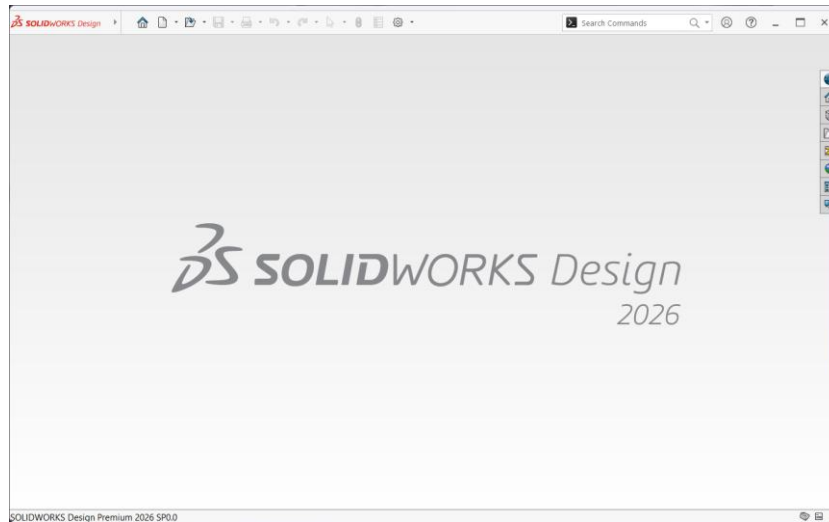
**Work Queue Batch #5 (Batch to Process Bend Process Test Parts):**

TASK #	BATCH #	ROW #	TASK DATE	TYPE	TASK NOTE	FROM	PROG.	SRC.
10##	5	1	TODAY	C	Import and Test PART #: BP-01-GAL-G60-06350-064		SLD	
10##	5	2	TODAY	C	Import and Test PART #: BP-02-GAL-G60-07850-079		SLD	
10##	5	3	TODAY	C	Import and Test PART #: BP-03-GAL-G60-10840-108		SLD	
10##	5	4	TODAY	C	Import and Test PART #: BP-04-SS-304-4-05000-025		SLD	
10##	5	5	TODAY	C	Import and Test PART #: BP-05-SS-304-4-06250-050		SLD	
10##	5	6	TODAY	C	Import and Test PART #: BP-06-SS-304-4-07812-125		SLD	
10##	5	7	TODAY	C	Import and Test PART #: BP-07-SS-316-2B-07812-020		SLD	
10##	5	8	TODAY	C	Import and Test PART #: BP-08-SS-316-2B-09370-030		SLD	

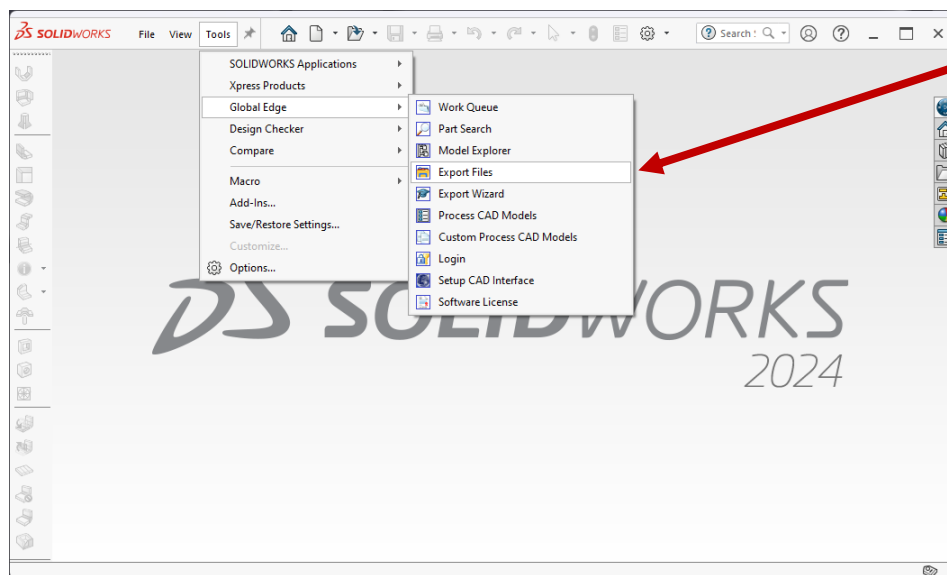
GE-02.1-Avatar-D.mp4

The next step is to launch SolidWorks followed by selecting the Tools, Global Edge, Export Files option which will display the following File Export screen and menu options.

5. Launch SolidWorks to display the following screen:



6. Select **"Tools > Global Edge > Export Files"** option:



7. This will display the following screen form and menu options:

GE-02.1-Avatar-E.mp4

Select the **“Batch”** option and highlight batch number five, follow by **“OK”**, which will display the File Export screen listing the files that are included in the work queue batch.

8. Select **“Batch”** which will display the following screen form and menu options. Highlight **“Batch #: 5”** followed by **“OK”** option:

Batch #	Batch Description	Assigned To	Type	Date/Time	Priority	Closed	Total	Status
5	Batch to Process Bend Process Test Parts	Idc	Configur...	11/8/2024 ...	0	0	0	Pending
3	Batch to Process Demo Parts	Idc	Configur...	11/8/2024 ...	0	0	0	Pending
2	Batch to Process Light Fixture Assembly	Idc	Configur...	11/8/2024 ...	0	0	0	Pending
1	Batch to Process Utility Cabinet Order	Idc	Configur...	11/8/2024 ...	0	0	0	Pending

9. This will display the following workflow tasks:

Global Edge Engineering Assistant - Version: 2026.01 - Build: 2 - File Export

Batch #: 2 Type: CAD Process Process 2D DXF Files Date/Time: 3/9/2026 2:14 AM Status: Pending

Processing Part #: Part Type: Material: Processing Task: OK Thickness: 0

Bend Process: File Path: Operation: Ready Total Tasks: 1

Task#	Doc #	File	Material	Thickness	Bend Ra.	Mlt Test Res.	Status
10	-	Document Row NOT Found	-	T-	R-	Pending	Pending

EXPORT OPTIONS

☒ DXF Files - Version: R2013 ☐ Rewrite ☐ STEP File - Version: AP203 ☐ STL Files

☐ DWG Files - Version: R2013 ☐ Rewrite ☐ Additive Manufacturing ☐ 3D Manufacturing ☒ Document Link ☐ Extended Data DXF

☐ ADS(SAT) Files ☐ IGES Files ☐ 2D PDFs ☐ 3D PDFs ☐ JPEG File ☒ Data Import ☒ Silent Mode ☐ Debug Mode

Default Sheet Metal Category: SHT SHEET METAL

Default Sheet Metal Style: Bend Resize: None ☒ Save Model Changes ☒ Manufacturability Test

Output Directory: ☐ Save Location C:\GlobalEdge\data\Output\DXF DXF Import Rules: SolidWorks CAD Interface

0 Total Files 0 Open Files

Output Location: %

Username: informix

Buttons: Batch, File Select, Work Queue, Select All, Uncheck, Export, Test Results, Close, Close

2.2 – Automated Sheet Metal Batch Unfolding

GE-02.2-Avatar-A.mp4

At the lower portion of the File Export screen there are check boxes to select the following export options. These options include the ability to perform an importation of complete CAD part parameters which serve as a foundation for Manufacturability Testing, Automated Routing Generation, and Automated Bend Program Generation. This includes the automated incorporation of extended data into the DXF flat files that can be directly imported into CAM bending software. This process eliminates the manual programming of sheet metal part files for Press Brakes, Robotic Folders, and Panel Benders.

10. Select the export file options on the lower portion of the screen:

Global Edge Engineering Assistant - Version: 2026.01 - Build: 2 - File Export

Batch #: 2 Type: CAD Process Process 2D DXF Files Date/Time: 3/9/2026 2:14 AM

Processing Part #: Status: Pending

Part Type: Material: Processing Task: OK 0

Bend Process: Thickness:

File Path: Operation: Ready Total Tasks: 1

Task#	Doc #	File	Material	Thickne...	Bend Ra...	Mlt Test Res...	Status
10...	--	Document Row NOT Found	--	T--	R--	Pending	Pending

EXPORT OPTIONS

☒ DXF Files - Version: R2013 ☐ Rewrite ☐ STEP File - Version: AP203 ☐ STL Files

☐ DWG Files - Version: R2013 ☐ Rewrite ☐ Additive Manufacturing

☐ ACIS(SAT) Files ☐ 3D Manufacturing

☐ IGES Files ☐ 3D PDFs ☐ JREG File

☐ 2D PDFs ☐ 3D PDFs ☐ JREG File

Default Sheet Metal Category: SHT SHEET METAL

Default Sheet Metal Style:

Bend Resize: None

☒ Document Link ☒ Data Import ☒ Save Model Changes

☐ Extended Data DXF ☒ Silent Mode ☒ Manufacturability Test

☐ Debug Mode

Output Directory: ☐ Save Location C:\GlobalEdge\data\Output\DXF

DXF Import Rules: SolidWorks CAD Interface

0 Total Files

0 Open Files

Output Location: %

Batch

File Select

Work Queue

Select All

Uncheck

Export

Test Results

Clear

Close

Username: informix

GE-02.2-Avatar-B.mp4

Select the “Export” button to start the processing of the selected sheet metal part with the output options that were selected below.

11. Check first five parts to process, then select **“Export”** option:

Global Edge - File Export: Global Edge Windows Demo Server

Batch #: 5 Type: CAD Process Batch to Process Bend Process Test Parts Date/Time: 11/8/2024 11:45 AM

Processing Part #: Part Type: Material: Processing Task: Status: Pending Of: 5

File Path: Operation: Ready Total Tasks: 15

Task#	Doc #	File	Material	Thickness	Bend Radius	Mfr Test Results	Status	
☒	1027	1021	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-01-GAL-G60-06350-064.aldprt	G60	0.063500	0.064000	Pass	Open
☒	1028	1022	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-02-GAL-G60-07850-079.aldprt	G60	0.078500	0.079000	Fail	Open
☒	1029	1023	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-03-GAL-G60-10840-108.aldprt	G60	0.108400	0.108000	Pass	Open
☒	1030	1024	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-04-SS-304-4-05000-025.aldprt	304-4	0.050000	0.025000	Fail	Open
☒	1031	1025	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-05-SS-304-4-06250-050.aldprt	304-4	0.062500	0.050000	Pass	Open
☐	1032	1026	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-06-SS-316-2B-07812-125.aldprt	304-4	0.078120	0.125000	Fail	Open
☐	1033	1027	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-07-SS-316-2B-07812-020.aldprt	316-2B	0.078120	0.020000	Pass	Open
☐	1034	1028	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-08-SS-316-2B-09370-030.aldprt	316-2B	0.093700	0.030000	Fail	Open
☐	1035	1029	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-09-SS-316-2B-14062-120.aldprt	316-2B	0.140620	0.120000	Fail	Open
☐	1036	1030	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-10-AL-5052-H32-05082-100.aldprt	5052-H32	0.050820	0.100000	Fail	Open
☐	1037	1031	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-11-AL-5052-H32-06408-105.aldprt	5052-H32	0.064080	0.105000	Pass	Open
☐	1038	1032	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-12-AL-5052-H32-08081-125.aldprt	5052-H32	0.080810	0.125000	Fail	Open
☐	1039	1033	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-13-CRS-CRS-04780-050.aldprt	CRS	0.047800	0.050000	Pass	Open
☐	1040	1034	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-14-CRS-CRS-07470-070.aldprt	CRS	0.074700	0.070000	Fail	Open

EXPORT OPTIONS

☒ DXF Files - Version: none ☐ STEP File - Version: AP203 ☐ STL Files ☐ STL Files

☐ DWG Files - Version: R2013 ☐ STL Files

☐ ACIS(SAT) Files ☐ Additive Manufacturing

☐ IGES Files ☐ 3D Manufacturing

☐ 2D PDFs ☐ 3D PDFs ☐ JPEG File

☐ Document Link ☒ Data Import ☒ Save Model Changes

☐ Extended Data DXF ☒ Silent Mode ☐ Manufacturability Test ☐ Debug Mode

Default Sheet Metal Category: SHT SHEET METAL

Default Sheet Metal Style: Bend Resize: None

Output Directory: ☐ Save Location C:\GlobalEdge\data\DXF-Output

DXF Import Rules: SolidWorks CAD Interface

0 Total Files 0 Open Files

Output Location: %

Username: ldc

12. When the conversion process is completed, select “OK” and Export Screen will be updated:

Global Edge - File Export: Global Edge Windows Demo Server

Batch #: 5 Type: CAD Process Batch to Process Bend Process Test Parts Date/Time: 11/8/2024 11:45 AM

Processing Part #: BP-05-SS-304-4-06250-050 BEND PROCESS TEST PART 05 Status: Pending

Part Type: Sheet Metal Material: 304-4 304-4 STAINLESS STEEL Processing Task: 5 Of: 5

Bend Process: 5 Air Bend, SS, 304-4, 0.06250, Radius - 0.050 Thickness: 0.0625 in

File Path: C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-05-SS-304-4-06250-050.sldprt

Operation: Ready Total Tasks: 15

Task#	Doc #	File	Material	Thickness	Bend Radius	Mfr Test Results	Status
1027	1021	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-01-GAL-G60-06350-064.sldprt	G60	0.063500	0.064000	Fail	Fail
1028	1022	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-02-GAL-G60-07850-079.sldprt	G60	0.078500	0.079000	Fail	Fail
1029	1023	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-03-GAL-G60-10840-108.sldprt	G60	0.108400	0.108000	Fail	Fail
1030	1024	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-04-SS-304-4-05000-025.sldprt	304-4	0.050000	0.025000	Fail	Fail
1031	1025	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-05-SS-304-4-06250-050.sldprt	304-4	0.062500	0.050000	Fail	Fail
1032	1026	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-06-SS-304-4-07812-125.sldprt	304-4	0.078120	0.125000	Fail	Open
1033	1027	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-07-SS-316-2B-07812-020.sldprt	316-2B	0.078120	0.020000	Pass	Open
1034	1028	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-08-SS-316-2B-09370-030.sldprt	316-2B	0.093700	0.030000	Fail	Open
1035	1029	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-09-SS-316-2B-14062-120.sldprt	316-2B	0.140620	0.120000	Fail	Open
1036	1030	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-10-AL-5052-H32-05082-100.sldprt	5052-H32	0.050820	0.100000	Fail	Open
1037	1031	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-11-AL-5052-H32-06408-105.sldprt	5052-H32	0.064080	0.105000	Pass	Open
1038	1032	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-12-AL-5052-H32-08081-125.sldprt	5052-H32	0.080810	0.125000	Fail	Open
1039	1033	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-13-CRS-CRS-04780-050.sldprt	CRS	0.047800	0.050000	Pass	Open
1040	1034	C:\GlobalEdge\data\CAD-Files\SolidWorks\BP-14-CRS-CRS-07470-070.sldprt	CRS	0.074700	0.070000	Fail	Open

EXPORT OPTIONS

☒ DXF Files - Version: none ☐ STEP File - Version: AP203 Default Sheet Metal Category: SHT SHEET METAL

☐ DWG Files - Version: R2013 ☐ STL Files Default Sheet Metal Style:

☐ ACIS(SAT) Files ☐ Additive Manufacturing Bend Resize: None ☒ Save Model Changes

☐ IGES Files ☐ 3D Manufacturing ☐ Document Link ☒ Data Import ☒ Manufacturability Test

☐ 2D PDFs ☐ 3D PDFs ☐ JPEG File ☐ Extended Data DXF ☒ Silent Mode ☐ Debug Mode

Output Directory ☐ Save Location DXF Import Rules: SolidWorks CAD Interface

C:\GlobalEdge\data\DXF-Output

0 Total Files
0 Open Files
Output Location:

100 %

Database: GlobalEdge Username: ldc

2.3 – Automated CAD Part Analysis

GE-02.3-Avatar-A.mp4

As the sheet metal is processed with Automated CAD Part Analysis functionality, the part is fully analyzed, and complete CAD part parameters are inserted into the Global Edge database. The software then utilizes these CAD part parameters to perform a Manufacturability Test which compares these parameters with matching shop floor machine tools. This process provides Design For Manufacturing functionality that identifies potential fabrication errors at the design stage to help ensure sheet metal parts can be successfully fabricated before reaching the shop floor.

Highlight / Select Batch

Select Batch #: 5 – Batch to Process Bend Process Test Parts

Select “Ok” Option

Global Edge – File Export Screen Displayed

Select “Select All” Option to Select the Following Files:

Task #: 1027 – Import and Test PART #: BP-01-GAL-G60-06350-064

Task #: 1028 – Import and Test PART #: BP-02-GAL-G60-07850-079

Task #: 1029 – Import and Test PART #: BP-03-GAL-G60-10840-108

Task #: 1030 – Import and Test PART #: BP-04-SS-304-4-05000-025

Task #: 1031 – Import and Test PART #: BP-05-SS-304-4-06250-050

Task #: 1032 – Import and Test PART #: BP-06-SS-304-4-07812-125

Task #: 1033 – Import and Test PART #: BP-07-SS-316-2B-07812-020

Task #: 1034 – Import and Test PART #: BP-08-SS-316-2B-09370-030

Task #: 1035 – Import and Test PART #: BP-09-SS-316-2B-14062-120

Task #: 1036 – Import and Test PART #: BP-10-AL-5052-H32-05082-100

Task #: 1037 – Import and Test PART #: BP-11-AL-5052-H32-06408-105

Task #: 1038 – Import and Test PART #: BP-12-AL-5052-H32-08081-125

Task #: 1039 – Import and Test PART #: BP-13-CRS-CRS-04780-050

Task #: 1040 – Import and Test PART #: BP-14-CRS-CRS-07470-070

Task #: 1041 – Import and Test PART #: BP-15-CRS-CRS-13450-060

Select Following Check Boxes:

Data Import

Silent Mode

Save Model Changes

Manufacturability Test

Export Files

Select “Export” Option

Software Performs Following Tasks:

Flat Pattern DXF File Generated

DXF Analysis Performed

Material / Thickness / Bend Radius

Blank / Flat (Length & Width)

Cutouts / Holes (Count & Size)

Minimum / Maximum Bend Length

Minimum / Maximum Bend Angle

Minimum / Maximum Flange Width

Minimum Pem Hole to Bend Line Gap

Minimum Embossment to Bend Line Gap

Minimum Louver to Bend Line Gap

Maximum Up / Maximum Down Bend

Fold / Hem / Extrude Counts

Minimum Taper / Die Cut to Bend Line Gap

Manufacturability Test Performed

Compares DXF Analysis with Matching Bend Process

Test Results Stored in Database (manufacture_test, mfr_test_det) Tables

Message “Conversion Complete!” Displayed

2.4 – Automated Routing Generation

GE-02.4-Avatar-A.mp4

The Automated CAD Part Analysis process culminates with the Automated Generation of optimal routing steps based on the CAD part parameters and matching machine tool capabilities. This includes the generation of DXF flat files that incorporate the necessary extended data to facilitate CAM bend program generation.

GE-02.4-Avatar-B.mp4

Select the “Routing” button to display the routing steps that were generated during the processing of the sheet metal part.

GE-02.4-Avatar-C.mp4

Select the “Close” button to return to the Import screen and select the “Test Results” button to access the results of the Manufacturability Test that was performed during the processing of the sheet metal part.

2.5 – Automated Manufacturability Testing

GE-02.5-Avatar-A.mp4

The “Test Part” tab displays the individual tests that were performed on the selected sheet metal part. The “CAD Value” column displays each of the CAD Part Parameters that are contained in the sheet metal CAD model. The “Test Limit” column displays the test limit values that are defined in the matching bend process. The “Status” column displays whether the CAD Part Parameter value falls within the bend process limit by indicating either “Pass”, “Fail”, or “Warning” which indicates it could be a potential issue.

GE-02.5-Avatar-B.mp4

The “DXF Image” tab displays an image of the DXF flat file. This screen provides the ability to scroll “Next” and “Previous” through each of the CAD part test parameters and the test results.

GE-02.5-Avatar-C.mp4

When selecting the “Manufacturability Test” option in the lower right-hand corner of the screen, the DXF flat file image will highlight an error in red. In our example, the following PEM holes appear in red because they were identified as being too close to a bend line.

GE-02.5-Avatar-D.mp4

The “Dimensions / Parameters” tab provides a complete listing of each of the imported CAD part parameters. These CAD part parameters provide the foundation throughout the Global Edge system for Automated CAM Bend Program Generation, Automated Routing Generation, Automated Production Job Generation, and Automated Sales Quote Generation.

Manufacturability Test Table (T-603)

The “**Manufacturability Test**” table includes the Manufacturability Test results that are generated during the Manufacturability Test process. The following are the sample Manufacturability Test Results that were generated:

TEST #	TEST DATE	TASK #	PART #	PROCESS	BP #	TEST RESULTS	STATUS
1	2023-12-11 13:00:30	1001	BP-01-GAL-G60-06350-064	BEND	1	Passed Bend Process Test with Warning	Pass
2	2023-12-11 13:00:30	1002	BP-02-GAL-G60-07850-079	BEND	2	Failed Bend Process Test	Fail
3	2023-12-11 13:00:30	1003	BP-03-GAL-G60-10840-108	BEND	3	Passed Bend Process Test with Warning	Pass
4	2023-12-11 13:00:30	1004	BP-04-SS-304-4-05000-025	BEND	4	Failed Bend Process Test	Fail
5	2023-12-11 13:00:30	1005	BP-05-SS-304-4-06250-050	BEND	5	Passed Bend Process Test with Warning	Pass
6	2023-12-11 13:00:30	1006	BP-06-SS-304-4-07812-125	BEND	6	Failed Bend Process Test	Fail
7	2023-12-11 13:00:30	1007	BP-07-SS-316-2B-07812-020	BEND	7	Passed Bend Process Test with Warning	Pass
8	2023-12-11 13:00:30	1008	BP-08-SS-316-2B-09370-030	BEND	8	Failed Bend Process Test	Fail
9	2023-12-11 13:00:30	1009	BP-09-SS-316-2B-14062-120	BEND	9	Failed Bend Process Test	Fail
10	2023-12-11 13:00:30	1010	BP-10-AL-5052-H32-05082-100	BEND	10	Failed Bend Process Test	Fail
11	2023-12-11 13:00:30	1011	BP-11-AL-5052-H32-06408-105	BEND	11	Passed Bend Process Test with Warning	Pass
12	2023-12-11 13:00:30	1012	BP-12-AL-5052-H32-08081-125	BEND	12	Failed Bend Process Test	Fail
13	2023-12-11 13:00:30	1013	BP-13-CRS-CRS-04780-050	BEND	13	Passed Bend Process Test with Warning	Pass
14	2023-12-11 13:00:30	1014	BP-14-CRS-CRS-07470-070	BEND	14	Failed Bend Process Test	Fail
15	2023-12-11 13:00:30	1015	BP-15-CRS-CRS-13450-060	BEND	15	Passed Bend Process Test with Warning	Pass

2.6 – Automated Bend Program Generation

GE-02.6-Avatar-A.mp4

During the processing of sheet metal parts, and if the selection was made to produce Extended Data DXF Flat Files, the Global Edge software will embed the necessary Extended Data into each DXF File to facilitate Automated Bend Program Generation. The Global Edge software provides the capability to define Bend Processes that match the capabilities of your available bending machines and specific tooling. This also includes the capability to match each specific sheet metal part with proper machine tool as determined through the Automated Routing Generation process.

GE-02.6-Avatar-B.mp4

Displayed is the Global Edge Engineering Setup screen that provides the capability to define Extended Data in accordance with specific CAM bending software. In our illustration we have defined a sample Extended Data record. Select the “Update” option and highlight “Bend Program Extended Data” and click ok. This will display the following screen form and menu options.

GE-02.6-Avatar-C.mp4

Global Edge provides the capability to define extended data for DXF files that are generated with Autodesk Inventor, SolidWorks, Solid Edge, Windchill, and Catia. This process incorporates DXF File Header Options that include material, thickness, upper and lower tooling. The next set of parameters include formats for perimeter, cutouts, holes, bends and embossments. Other format definitions for Stud, Location and Other hole formats.